

**(19) World Intellectual Property
Organization
International Bureau**



(43) International Publication Date
23 June 2005 (23.06.2005)

PCT

(10) International Publication Number
WO 2005/057033 A1

- (51) **International Patent Classification⁷:** **F16C 33/10, (72) Inventors; and**
17/10, F04D 29/04 **(75) Inventors/Applicants (for US only): FILHO, Ayres**
[BR/BR]; Echlin do Brasil Industria e Comércio Ltda,
Fukuichi Nakata Avenue 381, Diadema, CEP-09950-400
São Polo (BR). **RIBEIRO, Eduardo** [BR/BR]; Echlin
do Brasil Industria e Comércio Ltda, Fukuichi Nakata
Avenue 381, Diadema, CEP-09950-400 São Polo (BR).
FERRAZ, Edgard [BR/BR]; Echlin do Brasil Industria e
Comércio Ltda, Fukuichi Nakata Avenue 381, Diadema,
CEP-09950-400 São Polo (BR). **REZENDE, Robson**
[BR/BR]; Echlin do Brasil Industria e Comércio Ltda,
Fukuichi Nakata Avenue 381, Diadema, CEP-09950-400
São Polo (BR).

(21) **International Application Number:**
PCT/GB2004/005037

(22) **International Filing Date:**
30 November 2004 (30.11.2004)

(25) **Filing Language:** English

(26) **Publication Language:** English

(30) **Priority Data:**
0328568.1 10 December 2003 (10.12.2003) GB

(71) **Applicant (for all designated States except US, UZ): ECH-
LIN DO BRASIL INDUSTRIA E COMÉRCIO LTDA**
[BR/BR]; Fukuichi Nakata Avenue 381, Diadema, CEP-
09950-400 São Polo (BR).

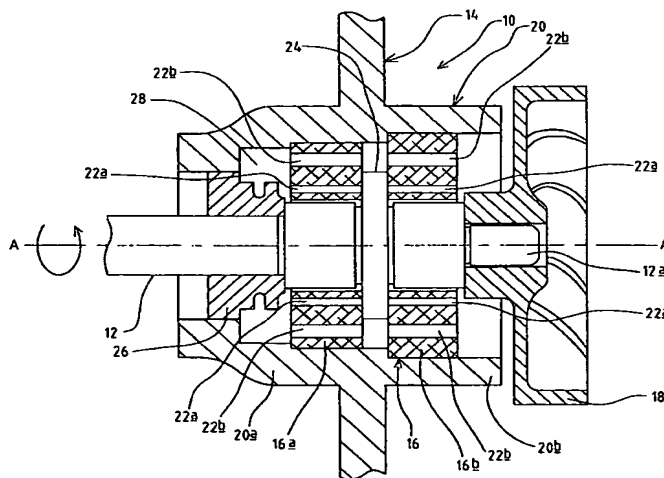
(71) **Applicant (for UZ only): DANA AUTOMOTIVE LIM-
ITED** [GB/GB]; 2 Central Park Drive, Rugby, Warwick-
shire CV23 0WE (GB).

(74) **Agent: FORRESTER KETLEY & Co;** Chamberlain
House, Paradise Place, Birmingham B3 3HP (GB).

(81) **Designated States (unless otherwise indicated, for every
kind of national protection available):** AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,

[Continued on next page]

- (54) Title:** HYDRODYNAMIC BEARING ARRANGEMENT



- (57) Abstract:** A hydrodynamic bearing arrangement (10) for a rotatable shaft (12), the arrangement (10) including a housing (14) in which is provided a shaft support (16) with an opening through which the shaft (12) extends, there being a space between the shaft support (16) and the shaft (12), the shaft support (16) including at least one passage (22a, 22b) therethrough which extends generally axially of the shaft (12) from a first side of the shaft support (16) to a chamber (28) provided in the housing (14) at a second side of the shaft support (16) so that liquid at the first side of the shaft support (16) may communicate with the chamber (28) at the second side of the shaft support (16) and thus pass into the space between the shaft (12) and the shaft support (16) from both the first side of the shaft support (16) and from the second side of the shaft support (16) via the passage (22a, 22b) and the chamber (28), the liquid between the shaft (12) and the shaft support (16) maintaining the space between the shaft (12) and shaft support (16) and providing a hydrodynamic bearing for the shaft (12).

WO 2005/057033 A1



TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.